38. Depression, social media, deep learning, machine learning, natural language processing, and mental health

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Abstract

Depression is a prevalent mental health disorder affecting millions worldwide, with a significant impact on individual well-being and societal functioning. Early detection and intervention is crucial for mitigating its adverse effects. This study investigated the potential of utilizing social media data to predict signs of depression, leveraging deep learning techniques. Using a dataset comprising social media text posts, we developed a deep-learning model, specifically a Recurrent Neural Network with Long Short-Term Memory (RNN-LSTM) , for depression prediction . Our model achieved remarkable results, demonstrating an accuracy of 97%, outperforming traditional models. Moreover, we explored the ethical considerations surrounding the use of social media data for mental health prediction. We proposed guidelines and best practices for responsible and ethical data usage in mental health research, emphasizing privacy, consent, and confidentiality. This research contributed to the growing body of literature on leveraging social media data for mental health prediction and highlighted the potential of deep learning techniques in enhancing prediction accuracy. Additionally, our ethical framework provided valuable insights into addressing ethical challenges in this domain, promoting responsible and ethical research practices.

Keywords: *Depression, social media, deep learning, machine learning, natural language processing, and mental health*